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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

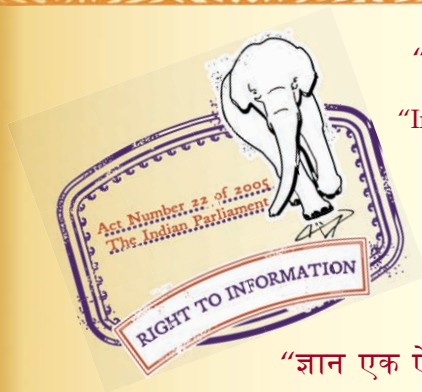
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 11718-1 (1986): Characteristics and methods of measurement for audio-visual video and television equipment and systems, Part 1: General [LITD 7: Audio, Video and Multimedia Systems and Equipment]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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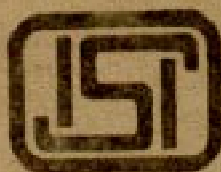


Indian Standard

CHARACTERISTICS AND METHODS OF
MEASUREMENT FOR AUDIO-VISUAL, VIDEO
AND TELEVISION EQUIPMENT AND SYSTEM

PART 1 GENERAL

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MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

CHARACTERISTICS AND METHODS OF MEASUREMENT FOR AUDIO-VISUAL, VIDEO AND TELEVISION EQUIPMENT AND SYSTEM

PART 1 GENERAL

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IS : 11718 (Part 1) - 1986

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Indian Standard

CHARACTERISTICS AND METHODS OF MEASUREMENT FOR AUDIO-VISUAL, VIDEO AND TELEVISION EQUIPMENT AND SYSTEM

PART 1 GENERAL

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 18 June 1986, after the draft finalized by the Recording Sectional Committee had been approved by the Electronics and Telecommunication Division Council.

0.2 The purpose of this standard is to facilitate the determination of the quality of audio-visual apparatus, the comparison of different types of apparatus and the determination of their proper application, by listing the characteristics which are useful for their specification.

0.2.1 In this standard, the word 'quality' is intended to denote mainly electro-acoustical or visual quality and not quality from the point of view of safety, durability, resistance to environmental conditions, etc.

0.2.2 Quality should be judged from the point of view of the user, who is concerned with the characteristics of the apparatus as a whole and not, as a rule, with details of the design of the apparatus or the characteristics of its components.

0.2.3 The use of this standard, both by manufacturer and user, will facilitate comparison between the manufacturer's specification and the user's requirements for a particular system.

0.3 The characteristics and its methods of measurement are covered by a series of standards consisting of the following individual parts:

Part 1 General

Part 2 Mechanical design features

Part 3 Electrical matching requirements

Part 4 Control, synchronization and address codes

Part 5 Kind of records and software requirements

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Part 6 Safety requirements

Part 7 Electronic learning systems

Part 8 Audio cassette systems

0.4 In reporting the result of a test made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS : 2-1960*.

1. SCOPE

1.1 This standard (Part 1) applies to audio-visual, video and television systems and to the parts of which they are composed or which are used as auxiliaries to such systems in the field of education, training and similar applications.

1.2 These systems range from very simple general-purpose devices to highly professional equipment used, for example, for audio-visual distribution systems.

1.3 No attempt is made in this standard to classify equipment with regard to its characteristics. The particular combination of characteristics specified for a given system is that required to ensure optimum performance under conditions of normal operation.

1.4 This standard is confined to a description of the different characteristics and the methods of measurement; it does not attempt to specify performance.

2. TERMINOLOGY AND EXPLANATION OF TERMS

2.0 For the purpose of this standard, the terms and definitions given in IS : 1885 (Part 3)† and IS : 1885 (Part 48)‡ shall apply in addition to the following.

2.1 A. P. System (Audio-Passive) — A system where the listener (student) can reproduce only the pre-recorded information (teacher).

2.2 A. A. System (Audio-Active) — A system where the listener (student) can reproduce the pre-recorded information (teacher), respond to it during the inter-posed gaps, if any, and simultaneously

*Rules for rounding off numerical values (revised).

†Electrotechnical vocabulary; Part 3 Acoustics.

‡Electrotechnical vocabulary; Part 48 Recording.

hear his response by means of a microphone/headphone device (headset), his response not being recorded.

2.3 A. A. C. System (Audio-Active-Comparative) — A system where the listener (student) can reproduce the pre-recorded information (teacher), respond to it during the interposed gaps, if any, and simultaneously hear his response by means of a microphone/headphone device (headset). The response is recorded so that the pre-recorded information (teacher) and the response (student) can both be reproduced.

2.4 A. P. V. System (Audio-Passive-Visual) — A system where the listener (student) can reproduce only the pre-recorded information (teacher), illustrated visually by means of synchronized film, filmstrip or slide projector, video tape or video disk player, or other visual display.

2.5 A. A. V. System (Audio-Active-Visual) — A system where the listener (student) can reproduce the pre-recorded information (teacher), respond to it during the interposed gaps, if any, and simultaneously hear his response by means of a microphone/headphone device (headset), his response not being recorded. The pre-recorded information (teacher) is illustrated visually by means of synchronized film, filmstrip or slide projector, video tape or video disk player, or other visual display.

2.6 A. A. C. V System (Audio-Active-Comparative-Visual) — A system where the listener (student) can reproduce the pre-recorded information (teacher), respond to it during the interposed gaps, if any, and simultaneously hear his response by means of a microphone/headphone device (headset).

2.6.1 The response (student) is recorded so that the information (teacher) and the response (student) can both be reproduced. The pre-recorded information (teacher) is illustrated visually by means of synchronized film, filmstrip or slide projector, video tape or video disk player, or other visual display.

2.7 Pause/Temporary Programme Stop

2.7.1 Temporary Programme Stop — A temporary interruption of the programme (for example, to give time for finding an answer to a question), caused by a cue tone on the tape at pre-determined points in the programme.

2.7.2 Pause Control — Interruption of the tape transport mechanism without changing any of the function modes of the electronic controls such as record or play-back.

2.8 Automatic End Stop — The tape motion is automatically stopped at the end of the magnetic tape.

2.9 Automatic Switch-Off — The interruption of the power supply to the system caused by a cue tone on the tape at the end of the information (teacher) or by the end of the tape.

2.10 Random Access — An ability to locate a defined point in the programme on the tape, which is indicated by an address.

2.11 Search — An ability to search rapidly backwards and forwards to other parts of the programme without loss of sound-picture synchronization.

2.12 Programmed Instruction — A method of instruction in which the student is instructed by following a controlled programme of instruction.

2.13 Multiple Choice — The possibility of making a choice from two or more answers to a question.

2.14 Cue Tone — An audio frequency of specified duration recorded on the cue track so as to provide signalling system for functions as may be required.

2.15 Master Cassette — This is normally a specially recorded cassette containing the information (teacher).

2.15.1 The cassette may be used by a teacher to distribute information to students, either directly or on to library/student cassettes. It may be so constructed that the pre-recorded information (teacher) cannot be erased.

2.16 Library/Student Cassette — A cassette intended for use by a student.

3. FREQUENCIES OF MEASUREMENT

3.1 If measurement are to be made at discrete frequencies, then these shall be the frequencies specified in IS : 2264-1963*. If a measurement relates to a 'reference frequency' then in the absence of a clear reason to the contrary, this shall be the 'standard reference frequency' of 1 000 Hz. Otherwise, it shall be one of the frequencies specified in IS : 2264-1963* so chosen that the result of the measurement is affected to the least possible extent by the setting of the tone controls.

*Preferred frequencies for acoustical measurements.

4. MARKING AND SYMBOLS FOR MARKING

4.1 Marking

4.1.1 Terminals and controls shall be adequately marked to give information regarding their function and characteristics. DC power terminals shall be marked with respect to polarity.

4.1.2 The marking shall indicate the polarity between input and output signal terminals, connections of terminals to an established reference point (earth) and interconnections between terminals.

4.1.3 The marking shall be such that it is possible to adjust the controls and to identify their positions with sufficient accuracy in connection with the characteristics given in the manual.

4.1.4 The marking can be carried out in the following ways: at the terminals and controls, in a description with respect to their function, and in the instructions given in the manual.

4.2 Symbols for Marking — Marking should preferably be composed of letter symbols, signs, numbers and colours which are internationally intelligible. The use of texts shall be avoided as far as possible.

5. ATMOSPHERIC CONDITIONS

5.1 Measurement and mechanical checks shall be carried out at any combination of temperature humidity and air pressure within the following limits:

- a) Ambient temperature: 15 to 35°C, preferably at $\pm 25^{\circ}\text{C}$;
- b) Relative humidity: 45 to 75 percent, and
- c) Air pressure: 860 to 1 060 mbar.

6. GRAPHICAL PRESENTATION

6.1 It is recommended that the relation between two or more quantities be presented in graphical form.

6.2 The relation between two quantities may be given as a single graph. The relations between three quantities may be given as a family of graphs in a single diagram, two of the quantities being given as abscissa and ordinate and the third as a parameter.

6.3 When the results of a point-to-point measurement for an individual device are presented as a continuous curve, the measuring points shall always be clearly indicated.

6.4 Extrapolated or intermediate curves based on theoretical expectations or other information presented, but not based on direct measurement, shall be clearly distinguished from measurement curves, for example, by another style of drawing.

6.5 A quantity compounded from specific frequency components, or from an assembly of components in specified frequency bands, may be presented as a line or band spectrum of constant width or constant proportional width. The bandwidth used shall be stated. If specifications refer to frequency bands of constant proportional bandwidth, preference shall be given to octave and one-third octave bands according to IS : 6964-1973*.

7. SCALES FOR GRAPHICAL PRESENTATION OF DATA

7.1 General

7.1.1 Linear or logarithmic scales are recommended for graphical presentation. Linear decibel scales are equivalent to logarithmic scales. Other kinds of scales, such as double logarithmic, shall be avoided. When using decibel scales, the zero of reference should, if possible, be the rated value. It is recommended that combinations of linear and logarithmic scales in the same graph be avoided.

7.1.2 Where quantities represented by abscissae and ordinates are of the same kind, it is recommended that the same unit length be used for both. Linear scales with remote zero point should be avoided as far as possible. For further information, reference should be made to IS : 8159-1976†.

7.2 Logarithmic Frequency Scales — For graphs in which a level (in decibels) is plotted against frequency on a logarithmic scale, the scale proportions shall be those for which the length for a 10 : 1 frequency ratio is equal to the length for a level difference of 25 dB or 50 dB on the ordinate scale.

7.3 Polar Level Diagrams — For polar plots in which a level (in decibels) is shown increasing outward along a radius, for whatever length is chosen to represent 1 dB, the length of radius of the circle near which maximum level is to be plotted shall be that which corresponds to a difference in level of 50 dB or 25 dB. For absolute response, the maximum level shall be plotted as near as is practicable to a radius corresponding to a difference in level of 50 dB or 25 dB.

*Specification for octave, half-octave and third-octave band filters for analysis of sound and vibrations.

†Scales and sizes for plotting frequency characteristics and polar diagrams.